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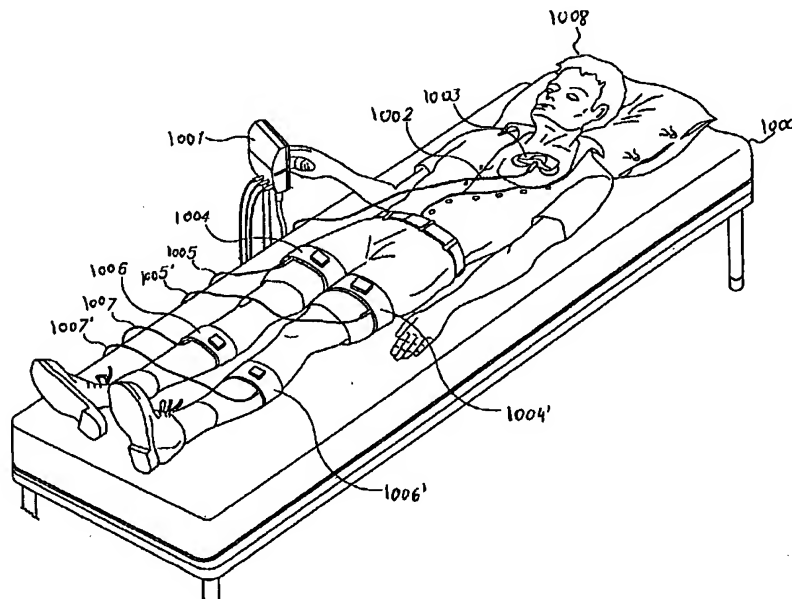
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US 10/469,685 (CIP)  
Filed on 3 September 2003 (03.09.2003)
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[Continued on next page]

(54) Title: A METHOD AND SYSTEM FOR EXTERNAL COUNTERPULSATION



(57) Abstract: A system and method for modulating cardiac blood flow of a patient by applying intermittent pressure on a limb of the patient, the system comprising a limb attachment, substantially surrounding the limb perimeter and an actuator pulling and releasing a flat member; a sensor for determining a physiological parameter relating to the patient; and a processing unit for receiving data from the sensor and issuing commands to the actuator.

WO 2005/074376 A2

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

REC'D 30 JAN 2006

PCT PCT

To:  
JONATHAN AGMON  
SOROKER-AGMON, ADVOCATES & PATENT  
ATTORNEYS  
NOLTON HOUSE, 14 SHENKAR STREET  
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## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) 27 JAN 2006

Applicant's or agent's file reference

4186.85

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

PCT/IL05/00150

International filing date (day/month/year)

06 February 2005 (06.02.2005)

Priority date (day/month/year)

04 February 2004 (04.02.2004)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): A61H 11/02 and US Cl.: 601/ 150

Applicant

ROUSSO, BENNY

### 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

### 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US  
Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Date of completion of this  
opinion

20 December 2005 (20.12.2005)

Authorized officer

Gregory Huson

Telephone No. (703)308-0858

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/IL05/00150

**Box No. I Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed  
☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper  
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.  
☐ filed together with the international application in electronic form.  
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/IL05/00150

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims Please See Continuation Sheet YES

Claims Please See Continuation Sheet NO

Inventive step (IS)

Claims Please See Continuation Sheet YES

Claims Please See Continuation Sheet NO

Industrial applicability (IA)

Claims Please See Continuation Sheet YES

Claims Please See Continuation Sheet NO

2. Citations and explanations:

Please See Continuation Sheet

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/IL05/00150

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

**V.1. Reasoned Statements:**

The opinion as to Novelty was positive (Yes) with respect to claims 2-4, 7-8, 11-38, 44-63, 66-76, 78-80, 83, 85-88  
The opinion as to Novelty was negative (No) with respect to claims 1, 5-6, 9-10, 39-43, 64-65, 77, 81-82, 84, 89-91  
The opinion as to Inventive Step was positive (Yes) with respect to claims NONE  
The opinion as to Inventive Step was negative (NO) with respect to claims 1-91  
The opinion as to Industrial Applicability was positive (YES) with respect to claims 1-91  
The opinion as to Industrial Applicability was negative (NO) with respect to claims NONE

**V. 2. Citations and Explanations:**

Claims 1, 5-6, 9-10, 39-43, 64-65, 77, 81-82, 84, 89-91 lack novelty under PCT Article 33(2) as being anticipated by Halperin (2002/0026131).

Halperin teaches every claimed feature of the claims including a device capable of being attached to a limb (see figure 3), having at least one actuator for pulling and releasing a flat member (see figure 3), one processing unit 29, motor 59. As for claims 39-43, note that the device of Halperin is capable of providing the recited treatment. As for claims 77, 89, 91, Halperin teaches the recited steps (a user can issue a command to the automated controller 29). As for claim 90, the step of evaluating can be performed by a physician.

Claims 2-4, 7-8, 11-38, 44-63, 66-76, 78-80, 83, 85-88 lack an inventive step under PCT Article 33(3) as being obvious over Halperin (2002/0026131) in view of Halperin et al (4,928,674).

Halperin et al (4,928,674) teaches an electrocardiogram processor 28 for compression device. In view of this teaching of Halperin et al, it would have been obvious to one ordinary skill in the art at the time the invention was made to provide the compression device of Halperin (2002/0026131) with a processing unit for issuing commands to the actuator. As for claim 7, providing the teaching of one limb attachment, it's in the realm of one skill in the art to provide another limb attachment where needed. As for claims 13-38, 44-63, 66-76, the device of Halperin and Halperin et al is capable of providing the recited function. As for claims 78-80, 83, 85-88, Halperin and Halperin et al teaches the recited steps.

Claims 1-91 lack an inventive step under PCT Article 33(3) as being obvious over the publication WO 02/069879 in view of Halperin et al (4,928,674).

The publication WO 02/069879 teaches every claimed feature of the claims including a device capable of being attached to a limb (see figure 1), having at least one actuator for pulling and releasing a flat member (see figure 3A), one controller 29, motor 20. While the publication WO 02/069879 does not show a processing unit, Halperin et al teaches electrocardiogram processor 28 for compression device. In view of this teaching of Halperin et al, it would have been obvious to one ordinary skill in the art at the time the invention was made to provide the compression device of the publication WO 02/069879 with a processing unit for issuing commands to the actuator.

Claims 1-91 meet the criteria set out in PCT Article 33(4), and thus satisfy industrial applicability because the subject matter claimed can be made or used in industry.

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 4186.85	<b>FOR FURTHER ACTION</b>	See item 4 below
International application No. PCT/IL2005/000150	International filing date ( <i>day/month/year</i> ) 06 February 2005 (06.02.2005)	Priority date ( <i>day/month/year</i> ) 04 February 2004 (04.02.2004)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant ROUSSO, Benny		

1.	This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).																								
2.	This REPORT consists of a total of 5 sheets, including this cover sheet.  In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 40%;">Box No. I</td> <td style="width: 50%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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4.	The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).																								

<p style="text-align: center;">The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No. +41 22 338 82 70</p>	<p>Date of issuance of this report 07 August 2006 (07.08.2006)</p> <hr/> <p>Authorized officer</p> <p style="text-align: center; font-size: 1.2em;">Simin Baharlou</p> <p>e-mail: pt09@wipo.int</p>
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